

sheet being placed and kept vertically in a waiting position in the working station;

a third line (3) including an upstream section fed stepwise with stacks by the first line, and passing crosswise through the working station, the third line moving at least one stack towards the sheet, so that the sheet gradually folds around the stack or stacks longitudinal contour while overlapping parallel edges of the sheet are heat-welded;

said second line further including:

first means and second means designed for receiving a wrapping sheet from conveying means situated upstream, for pulling said sheet to said working station, for clamping said sheet in said working station in at least one upper area;

keeping means cooperating with said first means to allow said sheet to pass through said working station and to be stabilized while dwelling therein;

said second means cooperating with said first means to clamp said sheet in said working station in at least a lower area and an upper area;

said first means include at least one pair of first endless belts having inner runs cooperating with said keeping means, said first endless belts being mounted around relative wheels and spaced apart to engage, when operated synchronously, corresponding edges of a surface of said sheet, said first belts forming a straight section passing through at least said station;

said second means include at least one pair of second endless belts mounted around wheels and spaced apart to engage, when operated synchronously and with the same speed as said first endless belts, corresponding edges of another surface of said sheet facing said second endless belts, said second endless belts defining a straight section situated in the upper part of said working station.

23. A machine, according to claim 22, further including at least one pair of wheels

around which said second endless belts are mounted, said one pair of wheels being situated in said working station and adjustable vertically to adjust the height of a window through which said stack passes.

24. A machine, according to claim 22, wherein:

said second means include an upper section and a lower section respectively, with the upper section being comprised of at least one pair of second endless belts mounted around wheels, said second endless belts being spaced apart to engage, when operated synchronously and with a same speed as said first endless belts, corresponding edges of another surface of said sheet facing said second endless belts, said second endless belts defining a straight section situated in the upper part of said working station, said lower section including at least one pair of third endless belts, mounted around wheels and operated synchronously and with the same speed as said first endless belts to engage the same edges of the sheet surface which are engaged by said second endless belts, said third endless belts facing the lower part of said straight section of the first endless belts and being spaced apart from said second endless belts to define a window, through which said stack passes.

25. A machine, according to claim 25, further including at least one pair of wheels around which said second endless belts are mounted, said one pair of wheels being situated in said working station and adjustable vertically to adjust the height of the window through which said stack passes.

26. A machine, according to claim 22, wherein said keeping means extend downwards, so as to keep the maximum possible size of the sheet adherent to the inner run of

the first endless belts.

27. A machine, according to claim 22, wherein said keeping means includes suction means.

28. A machine, according to claim 25, further including folding means situated downstream of said shaped profiles and designed to fold the sheet along flaps turned upstream of the stack.

29. A machine, according to claim 22, wherein said first line includes right angle pulling elements having bases and wing elements, said bases hinged to an outer ring extending vertically, said bases being also connected to an inner ring extending vertically, and with said wing elements always kept in vertical position, whereas each base is removably connected to said inner ring such that said base is disengagable from the inner ring if stresses acting on said wing overcome a predetermined value.

30. A machine, according to claim 29, wherein said pulling elements of said first line are operated at a speed variable with respect to a predetermined medium value, and the speed is reduced with respect to said medium value when a stack of articles is introduced into the first line.

31. A machine for packaging stacks of multiply articles of paper into wrappings obtained by wrapping sheets, the machine comprising:  
a first line for conveying and separating stacks of multiply articles of paper;

a working station for wrapping stacks of multiply articles of paper;

a second line for feeding stepwise heat-weldable wrapping sheets to the working station, each sheet being placed and kept vertically in a waiting position in the working station;

a third line (3) including an upstream section fed stepwise with stacks by the first line, and passing crosswise through the working station, the third line moving at least one stack towards the sheet, so that the sheet gradually folds around the stack or stacks longitudinal contour while overlapping parallel edges of the sheet are heat-welded;

said second line further including:

first means and second means designed for receiving a wrapping sheet from conveying means situated upstream, for pulling said sheet to said working station, for clamping said sheet in said working station in at least one upper area;

keeping means cooperating with said first means to allow said sheet to pass through said working station and to be stabilized while dwelling therein;

said first means including at least one pair of first endless belts having inner runs cooperating with said keeping means, said first endless belts being mounted around relative wheels and spaced apart to engage, when operated synchronously, corresponding edges of a surface of said sheet, said first belts forming a straight section passing through at least said station;

said second means include an upper section and a lower section respectively, the upper section being comprised of at least one pair of second endless belts mounted around wheels, said second endless belts being spaced apart to engage, when operated synchronously and with a same speed as said first endless belts, corresponding edges of another surface of said sheet facing said second endless belts, said second endless belts defining a straight section situated in the upper part of said working station, said lower section including at least one pair of third endless belts, mounted around wheels and operated synchronously and with the

same speed as said first endless belts to engage the same edges of the sheet surface which are engaged by said second endless belts, said third endless belts facing the lower part of said straight section of the first endless belts and being spaced apart from said second endless belts to define a window, through which said stack passes;

the pair of said third endless belts being operated, in time relation with hitting of the stack against the sheet in waiting position in said working station, to move from a working position to a displaced position displaced with respect to the first endless belts, to allow the lower portion of the sheet, introduced between said first endless belts and said third endless belts, to be released.

32. A machine, according to claim 31, wherein said third pair of endless belts are mounted with a capability to swing so as to move close to, or away from the pair of first endless belts.

33. A machine, according to claim 31, wherein said inner runs of the third endless belts are connected with vacuum means, operated in time relation with a movement away from the first endless belts, to rub, in combination a downward movement of the inner runs, the lower portion of a sheet introduced between said first endless belts and said third endless belts, against the inner runs.

34. A machine, according to claim 31, wherein the inner runs of said third endless belts move downwards in time relation with a movement of said third endless belts far away the first endless belts.

35. A machine for packaging stacks of multiply articles of paper into wrappings obtained by wrapping sheets, the machine comprising:

- a first line for conveying and separating stacks of multiply articles of paper;
- a working station for wrapping stacks of multiply articles of paper;
- a second line for feeding stepwise heat-weldable wrapping sheets to the working station, each sheet being placed and kept vertically in a waiting position in the working station;
- a third line (3) including an upstream section fed stepwise with stacks by the first line, and passing crosswise through the working station, the third line moving at least one stack towards the sheet, so that the sheet gradually folds around the stack or stacks longitudinal contour while overlapping parallel edges of the sheet are heat-welded;

said second line further including;

- first means and second means designed for receiving a wrapping sheet from conveying means situated upstream, for pulling said sheet to said working station, for clamping said sheet in said working station in at least one upper area;
- keeping means cooperating with said first means to allow said sheet to pass through said working station and to be stabilized while dwelling therein;
- pressing means situated upstream of the working station for receiving and pressing at least one stack of articles to be packaged;
- pusher means for transferring longitudinally said stack, so that said stack hits a wrapping sheet previously positioned vertically in said working station;
- conveying means situated downstream of said working station, with a stack partially wrapped within the wrapping sheet being introduced into said conveying means;
- said pressing means for receiving and pressing said stack to be packaged and said pusher means for longitudinal transfer of the stack, being carried by a slide moving longitudinally

between a backward position with respect to the positioning plane of the wrapping sheet, in which said stack is received and pressed, and a forward position, in which said compressing means for receiving and compressing the stack, hit and stretch said wrapping sheet, so as to move close to said conveying means to transfer said stack to said conveying means.

36. A machine according to claim 35, wherein said pressing means for receiving and pressing said stack, include a base plate fastened to said slide, said stack being fed onto said base plate, and a cover pressing plate for moving vertically.

37. A machine, according to claim 36, wherein said base plate and said pressing plate have a fore edge turned toward said wrapping sheet and formed with tapered corners.

38. A machine, according to claim 35, wherein said conveying means face, on a side turned toward said wrapping sheet, a pair of shaped profiles for facilitating introduction of a stack between opposite runs of said conveying means.

39. A machine, according to claim 38, further including folding-welding means for folding and welding overlapped edges of said wrapping sheet partially wrapping a stack introduced between opposite runs of said conveying means, with said folding-welding means acting substantially at a position flush with said shaped profiles.

40. A machine for packaging stacks of multiply articles of paper into wrappings obtained by wrapping sheets, the machine comprising:  
a first line for conveying and separating stacks of multiply articles of paper;

a working station for wrapping stacks of multiply articles of paper;

a second line for feeding stepwise heat-weldable wrapping sheets to the working station, each sheet being placed and kept vertically in a waiting position in the working station;

a third line (3) including an upstream section fed stepwise with stacks by the first line, and passing crosswise through the working station, the third line moving at least one stack towards the sheet, so that the sheet gradually folds around the stack or stacks longitudinal contour while overlapping parallel edges of the sheet are heat-welded;

said second line further including;

first means and second means designed for receiving a wrapping sheet from conveying means situated upstream, for pulling said sheet to said working station, for clamping said sheet in said working station in at least one upper area;

keeping means cooperating with said first means to allow said sheet to pass through said working station and to be stabilized while dwelling therein;

said first means and second means follow in cascade a slow run defined by two facing runs operated with constant speed, a sheet of film drawn from a reel and acted on by a cutting group being inserted between said two facing runs, said cutting group operating stepwise to make crosswise cutting lines defining pre-breaking sections;

said first and second means being operated with different speeds, so that a leading edge of the film can be introduced between said first and second means to break the pre-breaking section of the film situated in the slow run, in order to detach a sheet, obtained by the breaking, from the leading edge of the film, which is situated between the facing runs of the slow run, so as to locate said sheet in the working station, to feed the lower portion of said sheet to said working station, due to hitting of a stack against the sheet.